

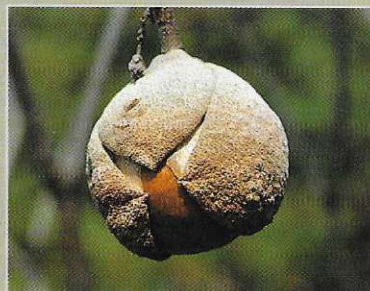
# The Reference Manual of Woody Plant Propagation

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SECOND EDITION

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*From Seed to Tissue Culture*



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### ***Acer griseum***

Paperbark Maple

SEED: The biggest problem is poor seed quality. Over the years, seeds the senior author collected ranged from 1 to 8% sound (embryos

present). An English source noted 2% sound seed, while cut tests over a number of years at the Arnold Arboretum showed 20% sound seed from a tree in 1962 and 80% in 1968 (June test). Seed production is extremely variable from year to year even on the same tree.

Seeds are doubly dormant and if fall planted require 2 years, some germinating the third year and beyond. The pericarp wall is extremely tough and dormancy is caused by a physical barrier as well as internal embryo 'conditions' (*HortScience* 16:341). The senior author has cold stratified seed for 90 days, split the fruit wall, extracted the embryos, planted them in vermiculite and most grew. This method is not feasible for large scale propagation, but if a few trees are desired and one does not want to wait 2 to 3 years, it might be worth the effort.

CUTTINGS: Extremely difficult (perhaps impossible) to root by conventional techniques. Over the years, using many clones (10 to 15 years and older), times, hormones, etc., senior author had one cutting that rooted. There is evidence for clonal differences in rootability. Cuttings collected in late June (Ohio) from 8-year-old trees, wounded, 2% IBA-talc, sand, mist, rooted 17 to 80%. Fifty-five percent of cuttings of one clone were overwintered successfully. No information was provided for the others.

Late June cuttings from 1 and 2-year-old seedlings rooted 80 to 85% when treated with 8000 ppm IBA-talc, sand, mist. The cuttings (young or from more mature wood) should not be transplanted after rooting but overwintered in a cool greenhouse, pithouse or suitable structure where temperatures range from 33 to 40°F. Even cuttings from seedlings, if collected too late, root in low percentages. The same individual who achieved 80 to 85% rooting also had 30% rooting by taking the cuttings too late.

One-hundred percent rooting of seedling material was reported using a combination of catechol ( $4.5 \times 10^{-3}$  M) and IAA ( $1.1 \times 10^{-3}$  M)—24 hour

soak. Several combinations of the above stimulated the greatest number of roots [*HortScience* 18(3):352-354 1983], Classic paper [*PIPPS* 34:570-573 (1984)] describes a commercial nurseryman's unbridled success. The basic recipe: Seedling stockblock, pruned in March (Rhode Island) to induce long shoots, 3rd week in June (timing is critical, wood can't be too hard or soft), sand, 8" long cutting, tip removed with only 1 pair of leaves remaining, 8000 ppm IBA-talc, 3" deep in medium, mist. Benlate and Captan applied regularly, rooting takes place in 8 to 10 weeks, lifted with a spading fork, average 60% rooting. Rooted cuttings are potted in 2V2" clay pots in soil: peat: sand and placed pot to pot in a greenhouse to reroot. Plants syringed and given bottom heat until mid October. Pots moved to deep pit house, covered with V2" peat moss and watered in. Maintained at minimum 28°F during winter. When shoots emerge in spring (June) plants are planted in outdoor beds under 50% shade. After 3 years they are sold for lining out material or transplanted to the field.

Extended photoperiod to force the cuttings into growth after rooting has been tested but the cuttings did not respond.

Root cuttings do not work for this or any of the trifoliate maples.

GRAFTING: For best results, *A. griseutn* should be grafted on seedling *A. griseum*. The other trifoliate maples, according to some, do not serve as suitable understocks. Work in Holland indicated the grafts were successful for 2 to 3 years but eventually failed. Senior author and cohorts budded *A. griseum* on *A. saccharum* in August with 40% success. The budded stock was dug, brought into the greenhouse and grew 18 to 30" the first three months. One commercial grower grafts *A. griseum* on *saccharum* but long term prospects are open to question. Senior author has two of these grafted trees in his garden. A conspicuous bulge is noticeable at union (*A. saccharum* is twice diameter of *A. griseutn*).